

What we claim is:

1. A method for making fine powder comprising:

selecting a precursor mixture wherein:

the mixture comprises at least one metal containing precursor;

5 the metal containing precursor has an average molecular weight of less than 2000 grams per unit mol of the metal,

the metal containing precursor has a normal boiling point greater than 350K, and

10 a viscosity of the precursor mixture is between 0.1 to 250 cP; and

processing the precursor mixture under conditions that produce the fine powder from the precursor mixture.

2. The method of claim 1 a metal content in the precursor mixture is greater than 22% by weight.

3. The method of claim 1 wherein the act of processing the precursor mixture comprises reacting the precursor mixture with oxygen.

4. The method of claim 3 wherein heat released during the precursor mixture's reaction with oxygen is on average greater than 1 kJ per liter of precursor mixture.

5. The method of claim 1 wherein the precursor mixture is stable for at least 5 minutes.

6. The method of claim 1 wherein the precursor mixture comprises at least two metal containing precursors.

7. The method of claim 1 wherein the precursor mixture comprises water.

8. The method of claim 1 wherein the precursor mixture comprises a hydrocarbon.

9. The method of claim 1 wherein the fine powder produced is a nanoscale powder.

10. An electrical device comprising the fine powder prepared using the method of claim 9.

11. An energy device comprising the fine powder prepared using the method of claim 9.

12. A coating comprising the fine powder prepared using the method of claim 9.

13. An abrasive comprising the fine powder prepared using the method of claim 9.

14. A health care product comprising the fine powder prepared using the method of claim 9.

15. A catalyst comprising the fine powder prepared using the method of claim 9.

16. An electronic device comprising the fine powder prepared using the method of claim 9.

17. A magnetic device comprising the fine powder prepared using the method of claim 9.

18. A mixture for production of fine powders, the mixture comprising:

at least one metal containing precursor, wherein metal containing precursor has an average molecular weight of less than 2000 grams per unit mol of the metal and the metal containing precursor has a normal boiling point greater than 350K; and

a viscosity of the precursor mixture is between 0.1 to 250 cP.

19. A method of selecting a precursor mixture suitable as a precursor for producing fine powders, the method comprising:

identifying mixtures that comprises at least one metal containing precursor, wherein the metal containing precursor has an average molecular weight of less than 2000 grams per unit mol of the metal and the metal containing precursor has a normal boiling point greater than 350K; and

selecting from the identified mixtures a precursor mixture having a viscosity between 0.1 to 250 cP.